

Abstract Submitted
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Recovery and control system for near-spacecraft SCOTT ROLLINS,
JOHN E. SOHL , Weber State University — Weber State University's High Altitude
Reconnaissance Balloon for Outreach and Research (HARBOR) is a platform for
student scientific experiments in low temperature, low pressure environments at
the edge of space. Future instrumentation plans for HARBOR flights will make it
impossible to fly less than twelve pound payloads (this changes the flight category
under FAA regulations) and these payloads will be more sensitive to impact damage.
This will require larger parachutes. Under a larger parachute the HARBOR near
space craft can drift for many kilometers while descending through the jet stream
from the stratosphere. Thus, it has become mission critical to find a way to exercise
more control over descent rate and landing zone. A parachute ejection system will
allow the HARBOR team to virtually pick their landing zone, open a parachute
below the jet stream or release a second chute to further slow the descent in order
to protect fragile instrumentation. The system will monitor the craft's position in 3
dimensions and will have radio telemetry as a backup to the onboard processor.

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